REMARKS

Claims 1-8 are pending in the above identified application. Claims 9-18 were withdrawn from consideration and are being canceled in this application. The Examiner has rejected claims 1-8. Applicant has amended claims 1 and 8 in order to clarify the invention.

The Examiner has restricted the originally filed 18 claims into claims 1-8 and claims 9-18. Applications have elected to prosecute claims 1-8 in the present application.

Drawings

The Examiner has indicated that the drawings are objected to under 37 CFR 1.83(a) for not showing each element of the claims. In particular, the Examiner states that "the clamping circuit according to claim 8 having a photodiode having an anode, a cathode, and a storage node, wherein the anode is connected to the other source or drain of the TFT and the cathode is connected to the bias line and a clamp diode having an anode and cathode, wherein the clamp diode anode is connected to the clamp line and the clamp diode cathode is connected to the storage node of the photodiode must be shown or the feature(s) canceled from the claim(s)." However, an inspection of Figure 3 of the present application, as described on page 8, lines 14-22 of the description, reveals that the cathode and the storage node of the photodiode are the same in the embodiment shown in Figure 3. According to the specification, with reference to Figure 3, "[t]he cathode of photodiode 316 is connected to the drain (or alternatively the source) of TFT 322." Page 8, lines 17-18. Further, the specification states that "[t]he pixel circuit further includes a clamp diode 312 whose cathode is connected to the storage node of the photodiode 316." *Id.*, lines 20-22.

Therefore, no corrections of the figures are required since both the cathode and the storage node of the photodiode are shown in Figure 316. However, Claim 8 has been amended for clarification to recite "a photodiode having an anode, and a storage node, wherein the storage node is connected to the other of the source or drain of the TFT and the anode is connected to the bias line" to remove the confusion.

Claim Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 1-8 "under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of the Applicant's Conceded Prior Art ACPA."

In particular, the Examiner asserts that

> Each pixel in the image sensor of Nakamura includes a phototransistor S_n, a thin film transistor (TFT) Q_n, and a clamping diode D_n. The image array further comprises a plurality of data lines φh_n, plurality of gate lines 103, and plurality of bias lines carrying a bias voltage Vcc. The plurality of clamp lines Lrh interconnecting the clamping diodes D_n in individual rows of the array. The clamp line Lrh carries a clamp voltage Ve (Col. 4, Line 38-Col. 5, Line 40).

(Office Action, page 3). However, Nakamura does not teach a thin-film transistor. The Examiner has identified transistors Q_n shown in Figure 2A of Nakamura as thin film transistors. However, nowhere does Nakamura describe those transistors as thin film transistors. Further, it is not obvious to substitute thin film transistors for the more conventional switching transistors disclosed in Nakamura. Further, since Nakamura relies on absorption of light in the thick silicon substrate, construction of a thin-film transistor to be formed as part of the pixel, as is recited in claim 1, is not feasible.

Additionally, the Examiner admits that "Nakamura does not disclose a photodiode as the light receiving means of the pixel sensor." *Id.*, page 4. However, the Examiner then argues that

"it would have been obvious to use the photodiode of the applicants conceded prior art as the light receiving means of the image sensor of Nakamura to electronically capture an object image." *Id.* However, the structural and functional differences between the photoelectric converting cell (which the Examiner refers to as a phototransistor) of Nakamura and the photodiode are great, leading to the conclusion that there would be no motivation to combine the photodiode of Figure 1 in Applicant's disclosure with the teachings of Nakamura.

As can be seen from Figure 1A of Nakamura, as opposed to Figure 1 of the present application, the structure of the light collection cell of Nakamura and a full-fill photodiode are significantly different. A substitution of a photodiode for the light receiving means disclosed in Nakamura would result in a non-functional apparatus.

Further, to establish a *prima facie* case, the Examiner must show that, among other things, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, contains some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Applicants submit that the Examiner failed to do so.

Therefore, the structures claimed in claims 1 and 8 are not obvious from Nakamura, even with combination with the structure disclosed by Figure 1 of the present disclosure. Claims 2-7 depend from claim 1 and are allowable over Nakamura for at least the same reasons as is claim 1.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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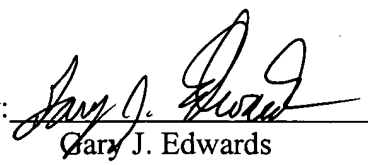
By: 
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